AUSTRALIAN ACARINA OF THE FAMILY TRICHADENIDAE

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Fig. 1.

Family TRICHADENIDAE Oudemans 1938.

So far this family comprises only the two genera *Trichadenus* Rondani 1870 and *Raoiella* Hirst 1924, both of which are now known to occur in Australia. As with the closely related Tetranychidae all the species are phytophagous and of economic importance.

The two genera may be separated on the structure of the tarsal claws and empodium as follows:

1. Claws distinctly claw-like and with a pair of lateral long clavate tenent hairs; empodium bifurcate with ciliations. .. .. .. Genus *Raoiella* Hirst 1924.
2. Claws modified, not claw-like, bifurcate, the inner branch short, with ciliations, outer branch long, seta-like with clavate apex; empodium bifurcate in apical half, stem and branches with ciliations. .. .. Genus *Trichadenus* Rondani 1870.

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Bull. Soc. ent. ital., ii, 168 (genotype *Trichadenus sericariae* Rondani 1870) = *Pseudoleptus* Bruyant 1911, Zool. Anz., xxxvii, p. 340 (genotype *Pseudoleptus arechavaletae* Bruyant 1911).

According to Oudemans, Tijds. Entom., lxxxi, Verslag, p. vii, Banks' *Stigmaeus floridanus* (U.S. Dept. Agric., Rept. 108, 1915, p. 36, fig. 47) is a *Pseudoleptus*, and *Pseudoleptus* Bruyant 1911 is synonymous with *Trichadenus* Rondani 1870.

Trichadenus australianus n.sp.

Fig. A–H.

Description: ♀ Length 410μ, width 190μ, elongate oval but with a conspicuous constriction and suture between the proterosoma and hispidosoma. Cuticle dorsally and ventrally granulate striate. Mandibles long and styliform. Palpi 3-segmented, basal segment very small, second the longest about twice as long as broad, apical spherical with a stout short sensory seta, and a longer simple pointed seta. Eyes 2 + 2, small, lateral and about midway on the proterosoma. Legs, 6-segmented, short, segments not wrinkled; tarsal claws modified, not claw-like, with a short inner ciliated branch, and a longer outer seta-like branch which is apically knobbed; tarsi III and IV with a long subapical recurved seta. I and II with a subapical stout outer sensory seta; leg I 105μ, II 87μ, III 77μ, IV 77μ. Peritreme typical of the family (cf. fig. E). Dorsal setae few and short; an anterior pair and one behind each pair of eyes on proterosoma; on hispidosoma, there are 6 subapical simple setae, the median one on each side being the longest, 30μ; laterally and an-

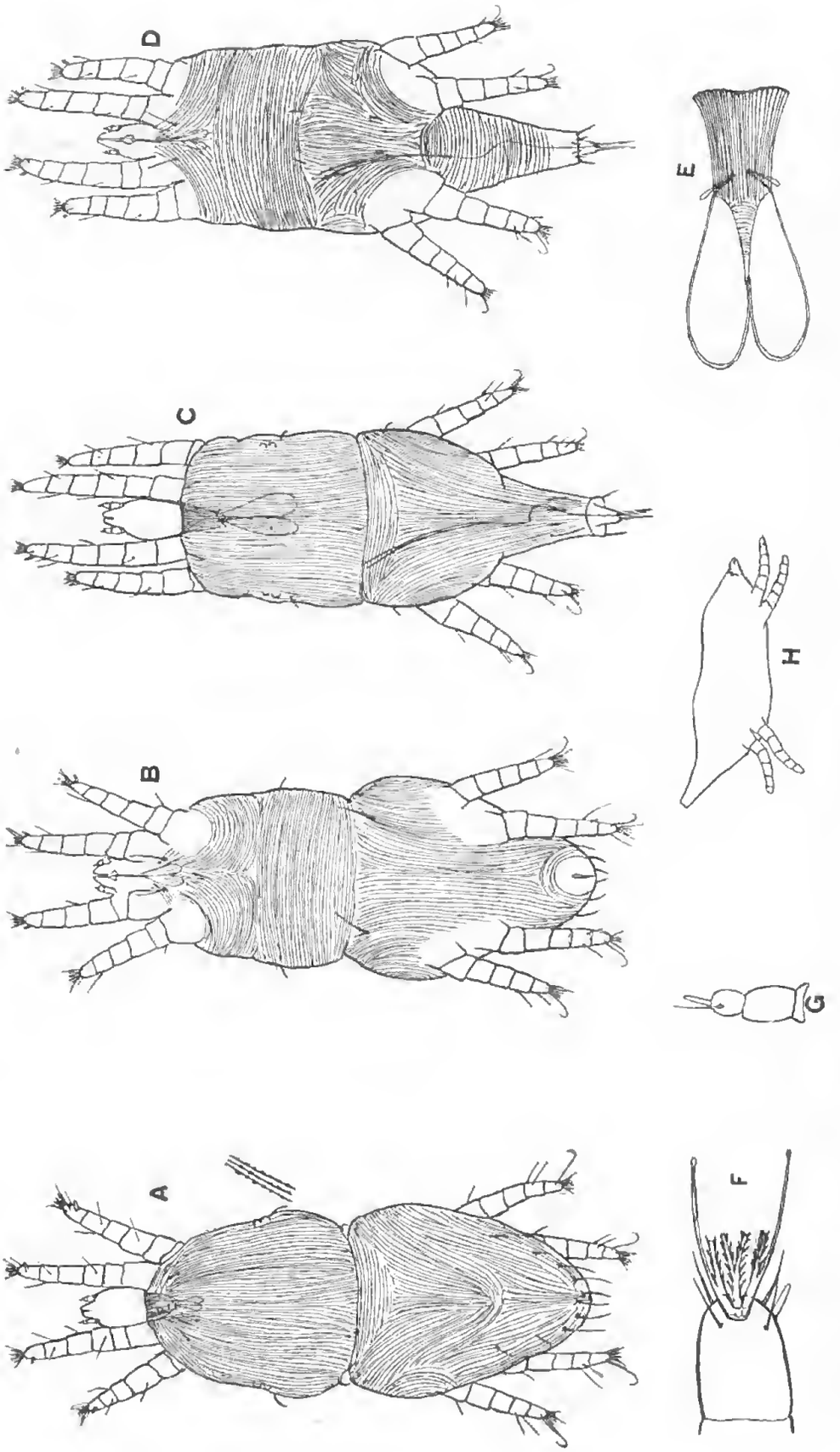

Fig. 1. *Trichadenus australianus* n.sp. A. ♀ dorsal; B. ♀ ventral; C. ♂ dorsal; D. ♂ ventral; E. peritreme; F. tarsus of leg 1 from below showing structure of claws and empodium; G. palp; H. diagrammatic side view of ♂.

terior of these apical setae are two short setae. Ventrally with a pair of long anterior setae, 40μ, near to coxae I, and another pair, possibly belonging to coxae III but placed close to the suture line.

♂ Generally as in ♀, length 350μ, width 160μ; posteriorly of coxae IV the hispidosoma tapers to a blunt truncate apex, and that portion of the body is strongly elevated (cf. fig. H). Dorsal and ventral setae as in ♀, except that the apex has only 4 dorsal and 6 ventral setae, of which the four inner ones are very short. From the truncate apex of the abdomen arises a tubular projection, through which the long fine penis is extruded. The legs are as in ♀, I 118μ, II 100μ, III 79μ, IV 92μ.

Loc. and Host. Numerous specimens on "couch" grass, *Cynodon dactylon* Rich. on a bowling green at Gayndah, South Queensland, January and February, 1943 (A. May).

Mr. Alan May of the Queensland Department of Agriculture and Stock, to whom I am indebted for this material, states that the mites were "attacking the grass *Cynodon dactylon*, and confined their attentions to the nodes being protected by the leaf sheath. Affected grass becomes clumped and somewhat stunted in habit, although there is a general thickening of the stems. Runners are not produced and the grass eventually dies out leaving bare patches. On removal of the leaf sheath, the mites are found clustering in large numbers at the nodes, and are accompanied by a general brown discoloration. The mites are bright red in colour and move very sluggishly when disturbed. On account of their position within the leaf sheath, direct control measures are out of the question.

List of Described Species.

Trichadenus sericeriae Rond. 1870, Italy, on *Morus*.
" *arechavaletae* Bruyant 1911, Uruguay, on *Distichtis scoparia* Arech.
" *floridanus* (Banks) Florida, on bananas.
" *australianus* n.sp. Queensland, on *Cynodon dactylon* Rich.

Genus Raoiella Hirst 1924.

Ann. Mag. Nat. Hist. 1924 (9), xiv, p. 522, pl. xvi, fig. 1–6 (genotype *R. indica*).

— *Rondanavarus* Ouds. 1938, iv, Tijds. Ent., 81, Verslagen, p. vii (genotype *Acarus mori* Rondani 1870).

As previously stated all the known species of this family are plant feeders, normally at least. *Trichadenus sericeriae* Rondani 1870, was originally described from the cocoons of *Sericaria mori* (Linn. 1758) the silk-worm of commerce, but this habitat was probably accidental for the mites were later found on the under sides of the leaves of mulberry (*Morus*), used as food for the silk worms.

Banks' *floridanus* occurred at the bases of the leaves of pine apple (*Ananassa*) and *Pseudoleptus arechavaletae* Bruyant 1911 was recorded from the grass *Distichtis scoparia* Arech. from Montevideo, Uruguay. This species was known by the vernacular name of "bicho colorado" but this appears to have been widely used and to include any minute red mites, including the larval Trombids, etc., capable of biting man. The species described in this paper was found attacking "couch" grass, *Cynodon dactylon* Rich. on a bowling green at Gayndah, Queensland, in January and February, 1943.

In the genus *Raoiella*, the genotype *R. indica* Hirst (Ann. Mag. Nat. Hist. (9), xiv, 1924, p. 522, pl. xvi, fig. 1–6) was recorded from coconut leaves from Coimbatore, S. India. The two known Australian species are both from Eucalypts, *R. australica* Wom. 1940 (Tr. Roy. Soc. S. Aust., lxiv (2), p. 264) from an un-

identified species from New South Wales, and from *E. andrewsiana* and *E. teretricornis* from Queensland, *R. queenslandica* Wom. 1942 (Tr. Roy. Soc. S. Aust., lxvi (1), p. 88) was from *E. micrantha*, Queensland. Rondani's *mori* was from *Morus*.

LIST OF DESCRIBED SPECIES.

Raoiella australica Wom. 1940, Australia, New South Wales, on Eucalyptus.
„ *indica* Hirst 1924, Southern India, on coconut leaves.
„ *mori* (Rondani 1870) Italy, on mulberry.
„ *queenslandica* Wom. 1942, Australia, Queensland, on Eucalyptus.